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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, DAO H

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,240

Applicant(s)

NEGLEY ET AL.

Examiner

Dao H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-11,16-22 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6-11, 16-22 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In response to the communications dated 05/16/2005, claims 1, 6-11, 16-22 and 27 are active in this application.

Claim 27 has been added.

Claims 2-5, 12-15, and 23-26 have been cancelled.

Remarks

2. Applicant's argument(s) filed 05/16/2005, with respect to the newly amended/added claim(s) 1, 6-11, 16-22 and 27, have been fully considered, but they are not persuasive. See the following rejections for further details.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim(s) 1-6, 9-10, and 16-18 are rejected under 35 U. S. C. § 102 (e) as being anticipated by U.S. Patent No. 6,734,465 to Taskar et al.

Regarding claim 1, Taskar discloses a method for forming a transmissive optical element, as shown in figs. 1-9, comprising:

filling a dome-shaped mold 13 with a molten liquid (col. 3, line 60 to col. 4, line 13; col. 5, lines 61 to col. 6, line 15) that comprises a transparent plastic (col. 7, lines 1-6), and a phosphor additive (col. 3, line 60 to col. 4, line 13; col. 5, line 61 to col. 6, line 58);

allowing the molten liquid to solidify to produce a dome-shaped transmissive optical element 13 having phosphor dispersed therein (col. 7, lines 46-51) and including a dome-shaped inner surface and a dome-shaped outer surface (nanophosphor downconverter 13 having a dome-shaped outer surface contacting the shell 14), and a dome-shaped inner surface facing the LED 11 (the dome-shaped inner surface may contact the optically transparent layer and/or the coating between the downconverter 13 and the LED 11; col. 6, lines 43-58; col. 8, lines 44-67; in addition, the dome-shaped nanophosphor downconverter 13 can be in a variety of configurations (col. 6, lines 3-5)); and

forming a transparent dome-shaped shell 14 (figs. 2-3; col. 6, lines 3-15) directly on the dome-shaped outer surface of the dome-shaped transmissive optical element 13 having phosphor disposed therein (the shell could compose of, but not limited to,

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acrylate, epoxy, silicon and silicon-epoxy hybrid (col. 9, lines 25-32; see also U.S. Patent No. 6,576,930 to Reeh et al., col. 6, lines 22-31).

See figs. 2-4; and also col. 3, line 32 to col. 10, line 61.

Regarding claim 6, Taskar discloses the method wherein the filling is preceded by forming the transparent dome-shaped shell 14 and wherein the filling comprises filling a dome-shaped mold that includes the transparent dome-shaped shell with a molten liquid that comprises a transparent plastic and a phosphor additive. See figs. 2-4 and col. 5, line 59 to col. 6, line 61; col. 7, lines 45 to 60. Col. 6, lines 3-8, Taskar describes that the nanophosphor downconverter 13 being disposed within lead frame 12 with a mold epoxy lens 14. This can be understood that the lead frame 12 with the lens 14 thereon, being filled with the downconverter 13. Therefore, the lens 13 must be formed before filling the dome-shaped mold 13.

Regarding claim 9, Taskar discloses a transmissive optical element, as shown in figs. 3-6, comprising:

a first dome-shaped shell 13 that comprises a transparent plastic including a phosphor dispersed therein (col. 7, lines 46-51); the first dome-shaped shell 13 including an inner surface (the dome-shaped inner surface may contact the optically transparent layer and/or the coating between the downconverter 13 and the LED 11; col. 6, lines 43-58; col. 8, lines 44-67; in addition, the dome-shaped nanophosphor downconverter 13 can be in a variety of configurations (col. 6, lines 3-5)) and an outer

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surface (nanophosphor downconverter 13 having a dome-shaped outer surface contacting the shell 14); and

the second dome-shaped shell 14 directly on the outer surface of the first dome-shaped shell 13. Figs. 3 clearly show such limitations.

Regarding claim 10, Taskar discloses the transmissive optical element wherein the phosphor is uniformly dispersed in the dome-shaped shell 13. See col. 3, line 60 to col. 4, line 13; col. 5, line 58 to col. 6, line 57.

Regarding claims 16-18, Taskar discloses the transmissive element comprising all claimed limitations. See figs. 3-8.

5. Claim(s) 9-10 and 16-18 are rejected under 35 U. S. C. § 102 (e) as being anticipated by U.S. Patent No. 6,521,915 to Odaki et al.

Regarding claim 9, Odaki discloses a transmissive optical element, as shown in figs. 1-6, comprising:

a first dome-shaped shell 21 (figs. 3, 5) that comprises a transparent plastic including a phosphor 4 dispersed therein (col. 6, line 64 to col. 7, line 54); the first dome-shaped shell 21 including an inner surface (in contact with a second inner dome-shaped sell 20) and an outer surface (exposed to the outside); and

the second dome-shaped shell 20 directly on the inner surface of the first dome-shaped shell 21. See col. 5, line 42 to col. 6, line 28.

Regarding claim 10, Odaki discloses the transmissive optical element wherein the phosphor 4 is uniformly dispersed in the dome-shaped shell 21. See figs. 3, 5.

Regarding claim 16, Odaki discloses the transmissive optical element in combination with a semiconductor light emitting device (1/3/8) that is configured to emit light into and through the first and second dome-shaped shells, to emerge from the dome-shaped shells. See figs. 3, 5.

Regarding claim 17, Odaki discloses the transmissive optical element in further combination with a mounting substrate 10 that is adjacent the semiconductor light emitting device such that the semiconductor light emitting device is between the mounting substrate and the first and second dome-shaped shells. See figs. 2, 3, 5.

Regarding claim 18, Odaki discloses the transmissive optical element comprising all claimed limitations. See figs. 2-5 and col. 5, line 42 to col. 8, line 64, and col. 12, lines 61-67.

6. Claim(s) 9 and 27 are rejected under 35 U. S. C. § 102 (e) as being anticipated by U.S. Patent No. 6,576,930 to Reeh et al.

Regarding claim 9, Reeh discloses a transmissive optical element, as shown in fig. 4, comprising:

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a first dome-shaped shell 4 (fig. 4) that comprises a transparent plastic including a phosphor 6 dispersed therein (col. 6, line 64 to col. 7, line 54); the first dome-shaped shell 4 including an inner surface (in contact with a second inner dome-shaped shell 15) and an outer surface (in contact with the outer third dome-shaped shell 10); and

the second dome-shaped shell 15 directly on the inner surface of the first dome-shaped shell 4. See col. 7, lines 47-64; col. 11, lines 51-59; col. 13, lines 15-46; and figs. 4-5.

Regarding claim 27, Reeh discloses the transmissive optical element wherein the second dome-shaped shell 15 is directly on the inner surface of the first dome-shaped shell 4, the transmissive optical element further comprising a third dome-shaped shell 10 directly on the outer surface of the first dome-shaped shell 4. See fig. 4.

7. Claim(s) 19-21 is/are rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 6,346,973 to Shibamoto et al., or U.S. Patent No. 6,346,973 to Shima (New ground of rejection(s)).

Regarding claim 19, Shibamoto discloses a transmissive optical element 2, as shown in figs. 1-5, comprising keypad key shells 31/35, including a keypad key face (upper surface of the number keys) and a keypad key wall (side wall) that extends from the keypad key face, the keypad key shell comprising a transparent plastic including a phosphor dispersed therein (col. 3, lines 50-61). See also col. 3, line 46 to col. 5, line 50.

Regarding claim 19, Shima discloses a transmissive optical element, as shown in figs. 1-2 and 4, comprising keypad key shells 7, including a keypad key face (upper surface of the key 7) and a keypad key wall (side walls) that extends from the keypad key face, the keypad key shell comprising a transparent plastic including a phosphor dispersed therein. See col. 2, lines 10-39.

Regarding claim 20, Shibamoto/Shima discloses the transmissive optical element wherein the phosphor is uniformly dispersed in the keypad key shell. See figs. 3, 6 of Shibamoto, or figs. 1-2 and 4 of Shima.

Regarding claim 21, Shibamoto/Shima discloses the transmissive optical element wherein the phosphor is uniformed dispersed in the keypad key face and is not included in the keypad key wall. See figs. 3, 6 of Shibamoto or figs. 1-2 and 4 of Shima.

Claim Rejections - 35 U.S.C. § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claim(s) 7 and 8 are rejected under 35 U. S. C. § 102 (e) as being unpatentable over U.S. Patent Application No. 2002/0172354 by Nishi, in view of the following remarks.

Regarding claim 7, Nishi discloses a method for forming a transmissive keypad key 1 through which a light emitting device emits light, as shown in figs. 1-5, comprising:

filling a keypad key-shaped mold 5 with a molten liquid that comprises a transparent plastic (paragraphs [0031]-[0032]); and

allowing the molten liquid to solidify to produce the transmissive keypad key (paragraph [0032]).

Nishi is silent about a molten liquid comprising a phosphor additive. However, Nishi does teach that the key top portion can be illuminated. See paragraph [0031].

Therefore, it would have been well known and obvious to one having ordinary skill in the art at the time the invention was made that an illuminated key top can be made by adding phosphor within the shell or within the inside of the key, or within the molten liquid enclosed within the shell (see also paragraph [0003] of the pending specification). In addition, it would have been well known in the art that in an illuminated keypad, phosphor will perform the illuminating operation (see also Shima, U.S. Patent No. 5,669,486, col. 2, lines 26-33). Therefore, the illuminated keypad of Nishi could definitely be modified to include phosphor additive within the molten liquid or plastic resin 5 to perform illuminating operation.

Regarding claim 8, Nishi discloses a method for forming a transmissive keypad key face through which a light emitting device emits light, as shown in figs. 1-5, comprising:

filling a keypad key-shaped mold 5 with a molten liquid that comprises a transparent plastic (paragraphs [0031]-[0032]);

allowing the molten liquid to solidify to produce the transmissive keypad key face (paragraph [0032]); and

forming a keypad key wall that is attached to the keypad key face.

Nishi is silent about a molten liquid comprising a phosphor additive. However, Nishi does teach that the key top portion can be illuminated. See paragraph [0031].

Therefore, it would have been well known and obvious to one having ordinary skill in the art at the time the invention was made that an illuminated key top can be made by adding phosphor within the shell or within the inside of the key, or within the molten liquid enclosed within the shell (see also paragraph [0003] of the pending specification). In addition, it would have been well known in the art that in an illuminated keypad, phosphor will perform the illuminating operation (see also Shima, U.S. Patent No. 5,669,486, col. 2, lines 26-33). Therefore, the illuminated keypad of Nishi could definitely be modified to include phosphor additive within the molten liquid or plastic resin 5 to perform illuminating operation.

10. Claim(s) 11 and 22 is/are rejected under 35 U.S.C. 103 (a) as being unpatentable over US Patent No. 6,734,465 to Taskar et al., or U.S. Patent No. 6,521,915 to Odaki et al., or U.S. Patent No. 6,346,973 to Shibamoto et al., in view of the following remarks.

Regarding claims 11, and 22, Taskar, Odaki and/or Shibamoto disclose(s) the transmissive optical element comprising all claimed limitations, except for explicitly describe that the phosphor is non-uniformly dispersed. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the phosphor of Odaki should be formed either uniformly or nonuniformly, depending on the desired output light, or the display of the device (see further U.S. Patent No. 6,717,355 to Takahashi et al., col. 5, lines 49-65, and col. 9, lines 41-50).

For the above reasons, it is believed that the rejections should be sustained.

Conclusion

11. **THIS ACTION IS MADE FINAL.** A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date

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the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao Nguyen whose telephone number is (571)272-1791. The examiner can normally be reached on Monday-Friday 9:00am - 6:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached on (571)272-1787. The fax numbers for all communication(s) is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1625.



Dao H. Nguyen
Art Unit 2818
July 12, 2005



David Nelms
Supervisory Patent Examiner
Technology Center 2800